Application No.: 09/521,663   Docket No.: 30980018-2 US (1509-106)

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (*Currently amended*) A method of printing a document from a computer with a printer, the printer having a printer processor that is not in the computer, the method comprising:

generating, in the computer, instruction[[,]] data that causes sufficient to cause the printer to print plural pages of the document, the instruction data comprising instruction data required to print a current page and at least one subsequent page;

generating, in the computer, by derivation from the instruction data required to print the at least one subsequent page, resource information indicative of printer processor resources required by the printer to print a current page and at least one subsequent page pages of printing the document;

sending the instruction data and the resource information required to print the current page and subsequent pages from the computer to the printer processor together with the current page resource information indicative of printer processor resources required by the printer to print the at least one subsequent page;

scheduling printer processor resources for printing the current page and at least one subsequent pages of the document page in accordance with the resource information sent together with the instructional data required to print the current page; and

printing the document with the printer processor resources as scheduled.

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2.   *(Previously presented)* A method as claimed in claim 1, wherein the instruction data is provided as at least one of page description language and job control language.

3.   *(Previously presented)* A method as claimed in claim 2, wherein the resource information is provided as annotation to at least one of the page description language and job control language, and wherein the method comprises, after the step of generating resource information, the step of annotating the instruction data with the resource information.

4.   *(Original)* A method as claimed in claim 3, wherein a common information processing structure carries out the steps of generating the instruction data, generating the resource information, and annotating the instruction data with the resource information.

5.   *(Previously presented)* A method as claimed in claim 4, wherein the common information processing structure includes a printer driver.

6.   *(Original)* A method as claimed in claim 3, wherein a first information processing structure carries out the step of generating the instruction data, and a second information processing structure carries out the steps of generating the resource information and annotating the instruction data with the resource information.

7.   *(Original)* A method as claimed in claim 6, wherein said second information structure is located in an information path for instruction data from the first information processing structure to the printer.

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8.   (*Previously presented*) A method as claimed in claim 7, wherein said second information structure includes a print spooler.

9.   (*Previously presented*) A method as claimed in claim 7, wherein said second information structure includes a discrete structure receiving the instruction data as input and providing instruction data annotated with the resource information as output.

10.   (*Currently amended*) A method as claimed in claim 3, wherein the annotation is ~~provided~~ in the form of comments in at least one of the page description language and job control language, and wherein the method comprises between the steps of sending the instruction data and the resource information from the computer to the printer and scheduling printer processor resources a further step of filtering the comments in at least one of the page description language and job control language to extract the resource information.

11.   (*Currently amended*) A method as claimed in claim 10, wherein the ~~resource information~~ ~~is provided as comments in page headers of the page description language~~ document comprises a first page and further pages and wherein the resource information is provided in the form of comments in page headers for the first page and the further pages in the page description language.

12.   (*Currently amended*) A method as claimed in claim 11, wherein the resource information ·is ~~provided as~~ in the form of comments in the page header to the first page of the document.

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13.   (*Original*) A method as claimed in claim 11, wherein the resource information is provided incrementally in a plurality of page headers.

14.   (*Currently amended*) A method as claimed in claim 13, wherein the page headers include resource information for the page to which they relate or to later pages in the document if such resource information has not already been provided in previous page headers.

15.   (*Previously presented*) A method as claimed in claim 11, wherein no resource information is provided as a comment to the page header of the first page.

16.   (*Original*) A method as claimed in claim 15, wherein the step of generating resource information does not include generation of resource information for the first page of the document.

17.   (*Currently amended*) A printer adapted to print a document from instruction data ~~and resource information,~~ sufficient to cause the printer to print plural pages of the document together with resource information derived from the instruction data indicative of printer processor resources required by the printer to print at least some of the plural pages of the document, the document having a current page and subsequent pages, the printer having a printer processor, the printer processor being arranged to

     (a)   schedule its resources for printing ~~a current page and~~ at least one of the subsequent pages of the document in response to ~~the instruction data in accordance with the~~ resource information ~~that includes information~~ provided with instruction data required to print

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the current page ~~of the document; and subsequent pages, the resource information required to~~ ~~print the subsequent pages being included with the current page~~, and

(b)   print the current ~~page~~ and the subsequent pages of the document from the instruction data with the printer processor resources as scheduled.

18.   (*Previously presented*) A printer as claimed in claim 17, wherein the instruction data is adapted to be provided as at least one of page description language and job control language.

19.   (*Previously presented*) A printer as claimed in claim 18, wherein the resource information is adapted to be provided as annotation to at least one of the page description language and job control language.

20.   (*Previously presented*) A printer as claimed in claim 19, wherein the annotation is adapted to be provided in the form of comments in at least one of the page description language and job control language, and wherein the printer processor is adapted to filter the comments in at least one of the page description language and job control language to extract the resource information.

21.   (*Currently amended*) A computer programmed to provide a document for printing by a printer, the document including current and subsequent pages, the programmed computer not being in the printer and having:

a first information processing structure to generate instruction data sufficient to ~~enable a~~ cause the printer to print the document;

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a second information processing structure ~~resource~~ to generate resource information

derived from the instruction data and indicative of printer ~~processor~~ resources required by the

printer to print ~~a current page and~~ at least one of the subsequent pages of the document; and

an information path such that the instruction data and the resource information ~~for~~

~~causing the printer to print the current page and subsequent pages~~ can be sent from the computer

to [[a]] the printer, the information ~~paths~~ path being such that the ~~instruction~~ resource data for the

at least one subsequent ~~pages~~ page is sent together with the ~~current page~~ instruction data

required to print the current page to enable the printer to schedule resources for printing the

document in response to the resource information.

22.   (*Previously presented*) A computer as claimed in claim 21, wherein the first information

processing structure is arranged for generating instruction data as at least one of page description

language and job control language.

23.   (*Previously presented*) A computer as claimed in claim 22, wherein the second

information processing structure is arranged for (a) enabling resource information as annotation

to at least one of the page description language and job control language, and (b) annotating the

instruction data with the resource information.

24.   (*Original*) A computer as claimed in claim 23, wherein the first information processing

structure and the second information processing structure are combined in a common

information processing structure.

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25.   (*Previously presented*) A computer as claimed in claim 24, wherein the common information processing structure includes a printer driver.

26.   (*Original*) A computer as claimed in claim 23, wherein said second information structure is located in the information path between the first information processing structure and a printer.

27.   (*Previously presented*) A computer as claimed in claim 26, wherein said second information structure includes a print spooler.

28.   (*Previously presented*) A computer as claimed in claim 26, wherein said second information structure includes a discrete structure for receiving the instruction data as input and for providing instruction data annotated with the resource information as output.

29.   (*Currently amended*) A computer as claimed in claim 23, wherein the second information structure is adapted such that the annotation is ~~provided~~ in the form of comments in at least one of the page description language and job control language.

30.   (*Currently amended*) A computer as claimed in claim 29, wherein the document comprises a first page and further pages subsequent in numbering the first page and wherein the second information structure is adapted such that the resource information is provided as comments in page headers [[of]] for the page and the further pages in the page description language.

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31.   (*Original*) A computer as claimed in claim 30, wherein the second information structure is adapted such that the resource information is provided as comments in the page header to the first page of the document.

32.   (*Withdrawn*) A computer as claimed in claim 30, wherein the second information structure is adapted such that the resource information is provided incrementally in a plurality of page headers.

33.   (*Previously presented*) A computer as claimed in claim 30, wherein the second information structure is adapted such that no resource information is provided as a comment to the page header of the first page.

34.   (*Original*) A computer as claimed in claim 33, wherein the second information structure is adapted so as not to generate resource information for the first page of the document.

35.   (*Currently amended*) A computer system comprising a printer adapted to print a ~~plurality of pages of a~~ document from instruction data ~~and~~ <u>sufficient to cause the printer to print plural pages of the document with</u> resource information <u>derived from the instruction data indicative of printer resources required by the printer to print at least some of the plural pages of the document, the document including a current page and subsequent pages,</u> the printer having a printer processor, the printer processor being arranged to schedule its resources for printing the different plural pages of the document from the instruction data in accordance with the resource information, and to print the document from the instruction data with the printer processor

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resources as scheduled; a computer programmed to provide a document for printing by a printer, the printer processor not being in the programmed computer, the programmed computer having a first information processing structure to generate instruction data sufficient to ~~enable~~ cause a printer to print the document[[,]] and a second information processing structure resource to generate resource information derived from the instruction data and indicative of printer ~~processor~~ resources required by the printer to print ~~a current page and~~ at least one of the subsequent pages of the document, and an information path such that the instruction data ~~and the resource information~~ for the at least one of the subsequent pages can be sent ~~from the computer to the printer for causing the printer~~ together with the instruction data required to print the current page to enable the printer to schedule resources for printing the document in response to the resource ~~page and subsequent pages; and a communication path for sending information about printing the current page with the subsequent pages from the computer to the printer and a communication path for sending information about printing the current page with the subsequent pages from the computer to the printer.~~

36-51. *(Cancelled)*

52.   *(Currently amended)* In combination, a computer and a printer having a processor not included in the computer, the computer being arranged for supplying to the printer processor (a) instruction data sufficient to cause the printer to print the document and (b) resource information derived from the instruction data indicative of printer processor resources required by the printer at different document printing stages,

        ~~the printer processor being arranged to schedule printer processor resources for~~ [[the]]

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~~different document printing stages in accordance with the resource information, and to cause the~~ ~~printer to print the document with the printer processor resources as scheduled, and~~ the computer being arranged to provide to the printer processor the resource information as comments in page description language located in page headers for enabling the printer processor to learn, in advance of processing instruction data for a document printing stage, the printer resources required to process instruction data for that document printing stage;

the ~~computer~~ printer processor being arranged to ~~provide to the printer processor the~~ ~~resource information as comments in page description language located in page headers for~~ ~~enabling the printer processor to learn, in advance of receiving pages of a job, how the printer~~ ~~resources are to be scheduled to prevent printer stalls~~ schedule printer processor resources for different document printing stages in accordance with the resource information to prevent printer stalls, and to cause the printer to print the document with the printer resources as scheduled.

53. (*Previously presented*) The combination as claimed in claim 52, wherein the instruction data includes page description language.

54. (*Currently amended*) A method of operating a printer with a printer processor to print a document comprising

supplying to the printer processor (a) instruction data sufficient to cause the printer to print the document and (b) resource information ~~indicative of printer processor resources~~ ~~required by the printer at different document printing stages~~ derived from the instruction data indicative of printer processor resources required by the printer at different document printing stages, the resource information being supplied as page description language located in page

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headers for enabling the printer to learn, in advance of processing instruction data for a document printing stage, the printer resources required to process instruction data for that document printing stage;

the printer processor scheduling printer ~~processor~~ resources for different document printing stages in accordance with the resource information to prevent printer stalls, and

the printer processor causing the printer to print the document with the printer processor resources as scheduled, ~~causing the computer printer processor to provide to the printer processor the resource information as comments in page description language located in page headers so the printer processor learns, in advance of receiving pages of a job, how the printer resources are to be scheduled to prevent printer stalls~~.

55.   (*Previously presented*) The method as claimed in claim 54, wherein the instruction data includes page description language.

56 - 58.   (*Cancelled*)

59.   (*Currently amended*) ~~The method as claimed in claim 1, wherein~~ A method of printing a document from a computer with a printer, the printer having a printer processor, the method comprising:

        generating, in the computer, instruction data that causes the printer to print plural pages of the document;

        generating, in the computer, resource information indicative of printer processor resources required by the printer to print a current page and subsequent pages of the document;

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_____sending the instruction data and the resource information required to print the current page and subsequent pages from the computer to the printer processor with the current page;

_____scheduling printer processor resources for the current page and subsequent pages of the document in accordance with the resource information sent with the current page; and

_____printing the document with the printer processor resources as scheduled;

the document [[has]] having a first page that forms the current page, the first page including as resource information a full timetable for [[the]] scheduling of the printer processor resources.

60 - 65.   (*Cancelled*)

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